The Physician's Interface to Epileptologist's Assistant - A Cost Effective Expert System

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ABSTRACT

A physician's interface has been added to Epileptologist's Assistant, a cost effective expert system to assist physicians in epilepsy follow up clinic. The interface allows physicians to add and modify patient data that has already been entered by the nurse. The progress note is than printed out and signed or could be electronically transferred into a computer based patient record.

Epileptologist's Assistant is a cost effective medical expert system. It reduces the cost of personnel time by 40% [1, 2, 3]. The system is used in epilepsy follow up clinic. It allow nurses with minimal training to gather patient information. Over 300 questions could be asked but the 200 rules guide the nurse in collection only the relevant data for each patient. Normally 30 to 50 questions are asked of a patient. This data is arranged into a SOAP formatted progress note and a patient information sheet. These are reviewed by the physician with the patient. Since all of the information gathered during the nurse's interview is presented in the Subjective and Objective sections of the note, our system does not practice medicine. The Assessment and Plan sections are suggestions to the physician.

Under earlier versions of the system, the progress note and patient information sheets were printed out after the nurse's interview. The physician made changes by writing on the paper print outs. While the system was cost effective it did result in several short comings: 1) The data stored in the computer data base was either inaccurate or required a second editing process. 2) The paper progress note could not be sent to the computerized patient record system. To alleviate these problems we have developed a physician's interface and implemented a networked database system. We have used ToolBook (Asymetrics) for the user interface, Nexpert Object (Neuron Data) for the expert system, DBase (Borland) for the database, and Windows for Workgroups as the network.

Our design philosophy for the user interface is that it must be so intuitive and easy to use that the technology 'disappears.' The physician must be able to evaluate the patient more quickly with the system than with the paper chart. The underlying expert system anticipates user's needs and speeds data entry. We want the user to concentrate on medical care, not technology. The physician interface is in the form of a preliminary progress note. Data on the note is changed by double clicking on the field and selecting from intelligently generated lists. Our goal is for there to be essentially no keyboard typing entries. In addition, the physician has access, through a patient file card, to previous progress notes, reports of EEG's and other studies, and graphical information on seizures and anti-convulsant treatment. When editing is completed a final progress note is generated, along with a patient information sheet. All data is stored. As the system advances we will use more rules to guess which responses are most likely, thereby making entry even easier.

References

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